

E.

**WELLINGTON CREEK**  
(tributary to Lightning Creek)

***Summary***

The Wellington Creek problem assessment will be completed in 2003 along with the Clark Fork River.

**1. Physical and Biological Characteristics**

Existing information on watershed conditions in Wellington Creek indicates the system is in fair condition as a result of flooding, road construction and subsequent failures, and logging activity. A logging road parallels Wellington Creek over much of its length, and there are several stream crossings within the drainage. Several significant landslides associated with road failures have occurred in the Wellington Creek drainage, and Wellington Creek is generally considered to be unstable (Corsi, et al. 1998).

Excess bedload, loss of large woody debris, and altered water delivery and flow patterns have resulted in unstable channels. There are over 12 miles of roads in the Wellington Creek watershed, and average road density is between one and two miles per square mile. Cacek (1989) found that gentler slopes have contributed to less slide activity resulting from land management activity than in other portions of the Lightning Creek basin, and that landslides were not contributing to sediment to the stream. Roads may alter drainage patterns and increase peak flows (Corsi, et al. 1998). Approximately 19% of the Wellington Creek watershed has been logged. Removal of trees may contribute to increased peak flows.

**2. Pollutant Source Inventory**

Point Source Discharges

There are currently no point sources discharging into Wellington Creek.

Nonpoint Source Discharges

Excess bedload, loss of large woody debris, and altered water delivery and flow patterns have resulted in unstable channels and are believed to be the major limiting factors to water quality and beneficial uses in Wellington Creek.

*Roads* - There are over 12 miles of roads in the Wellington Creek watershed, and average road density is between one and two miles per square . Cacek (1989) found that gentler slopes have contributed to less slide activity resulting from land management activity than in other portions of the Lightning Creek basin, and that landslides were not contributing to sediment to the stream. Roads may alter drainage patterns and increase peak flows.

*Timber Harvest* - Approximately 19% of the Wellington creek watershed has been logged. Removal of trees may contribute to increased peak flows.

### **2.a. Summary of Past and Present Pollution Control Efforts**

Wellington Creek was evaluated in 1998 as part of the Idaho Department of Lands Cumulative Watersheds Effects Assessment project to determine the effects of forest practices upon water quality in this watershed.

Stream habitat surveys were conducted in the rattle Creek drainage in 1997 by Cascades Environmental, Inc. as part of Washington Water Power's (Avista Corp.) hydro relicensing process. Last fall, the Rocky Mountain Research Station (USFS) began a longer term investigation of the relationship between stream hydrology and bull trout redd site selection and spawning success. (Corsi, et al. 1998)

Beneficial Use Attainability and Status Reconnaissance surveys were completed by the IDEQ in 1995, 1996, and 1997. These surveys were completed as required by a status 303(d) listing in 1994.

## **3. Water Quality Concerns and Status**

### **3.a. Applicable Water Quality Standards**

### **3.b. Summary and Analysis of Existing Water Quality Data**

Stream habitat surveys were conducted in Wellington Creek in 1997 by Cascade Environmental, Inc. As part of WWP's hydropower relicensing process. Results of these surveys were>>>>>>>>>>

### **3.c. Data Gaps For Determination of Support Status**

## **4. Problem Assessment Conclusions**

## **References**

- Cacek, C. C. 1989. The relationship of mass wasting to timber harvest activities in the Lightning Creek Basin, Idaho and Montana. Eastern Washington University, Masters Thesis.
- Corsi, C., DuPont J., Mosier, D., Peters, R., and Roper, B. 1998. Lake Pend Oreille Key Watershed Bull Trout Problem Assessment. Idaho Department of Health and Welfare, Division of Environmental Quality. Coeur d'Alene, Idaho.

F.

**PORCUPINE CREEK**  
(tributary to Lightning Creek)

**Summary**

The Porcupine Creek problem assessment will be completed in 2003 along with the Clark Fork River.

**2.1.1. Physical and Biological Characteristics**

Porcupine Creek drains into Lightning Creek from the west, and provides about four miles of accessible fish habitat. A barrier falls exists a short distance down stream from the outlet of Porcupine Lake, which is at the head of the drainage.

Existing information on watershed conditions in Porcupine Creek indicates the system is in poor condition as a result of flooding, road construction and subsequent failures, and logging activity. A logging/recreation road parallels Porcupine Creek over much of its length, and there are several stream crossings within the drainage. Evidence of fill slope failures is evident at most headwater stream crossings on the main Porcupine Creek road. The channel is unstable in the lower reaches as a result of bedload deposition.

A road parallels Porcupine Creek for most of its length, crossing several headwater channels. Evidence of fill slope failures at headwater stream crossings is common, and failed culverts can be seen at the bottom of slides, in the Porcupine Creek channel. Landslides from road failures probably occurred recently (within the last 10 years) as Cacek (1989) did not report slide activity impacting the stream.

Hybridization between brook trout in Porcupine Lake and the upper reaches of Porcupine Creek indicate that brook trout pose a significant threat to bull trout, a federally threatened species, in Porcupine Creek. Relatively recent declines in spawning activity, despite the long term presence of brook trout in the system, suggest poor stream conditions may be favoring brook trout and the potential for hybridization (Corsi, et al. 1998).

**2. Pollutant Source Inventory**

Point Source Discharges

There are currently no known point source discharges in the Porcupine Creek watershed.

Nonpoint Source Discharges

Excess bedload, loss of large woody debris, and altered water delivery and flow patterns have resulted in unstable channels and may impair beneficial uses in this watershed. Sources of this pollution in the Porcupine Creek watershed are primarily roads and timber harvest, as identified below:

*Timber Harvest* - timber harvest has occurred in several locations in the watershed. Approximately 20% of the watershed has been logged, including several large clearcuts. Timber removal at this scale may increase water yield and peak flows.

[illegible]

The 1998 Lake Pend Oreille Key Watershed - Bull Trout Problem Assessment listed Recommended Approaches to Address Limiting Factors of bull trout propagation and persistence in this stream and also established Recommended Actions to promote water quality and bull trout habitat in the Porcupine Creek watershed.

Porcupine Creek is also under scrutiny as a high priority watershed for bull trout recovery in the Lake Pend Oreille Key Watershed, as assessed by the Panhandle Bull Trout Technical Advisory Team.

The 303(d) list is composed of streams found to be not supporting beneficial uses designated for that stream. Beneficial uses that have been designated for Porcupine Creek include: Cold Water Biota, Salmonid Spawning, Primary Contact Recreation, Secondary Contact Recreation.

Industrial Water Supply, Wildlife Habitat, and Aesthetics.

Additionally, Porcupine Creek is under scrutiny as a high priority under the Lake Pend Oreille Key Watershed Bull Trout Problem Assessment for sustainable persistence of bull trout, a federally protected species under the Endangered Species Act.

### **3.b. Summary and Analysis of Existing Water Quality Data**

A Beneficial Use Assessment and Status Reconnaissance survey was conducted on Porcupine Creek on July 6, 1995. This survey produced results which were found to be fully supporting designated beneficial uses within this watershed. The macrobiotic index (MBI), which evaluates the aquatic macroinvertebrate community, was determined to be 5.42, a value that demonstrates a healthy community with high species diversity. The habitat index (HI) scores a combination of habitat parameters and produced a result of 104 (not impaired) for Porcupine Creek. The substrate was found to be composed of only 3.17% of fines (particles <6 mm. diameter).

Continuous temperature data was found to be slightly in exceedance of criteria for salmonid spawning but well within Cold Water Biota criteria with a high average daily temperature (>10 days continuous) of approximately 14°C for late July and early August. Average daily temperatures consistently dropped from this high to approximately 9°C in early October.

No IDEQ fish data was acquired as part of the Beneficial Use Reconnaissance Project, so determinations of support status of Salmonid Spawning could not be assessed according to this protocol.

Idaho Fish and Game has conducted bull trout redd counts in Porcupine Creek in 11 of the past 15 years. Redd numbers have declined noticeably since the 1980's with a high of 52 in 1984 to a low of zero in 1996 and 1997. Based on the low numbers of redds, the apparent declining trend, and substantial variability in counts, bull trout in Porcupine Creek are expected to have a fairly low probability of persistence.

### **3.c. Data Gaps For Determination of Support Status**

## **4. Problem Assessment Conclusions**

### **References**

- Cacek, C. C. 1989. The relationship of mass wasting to timber harvest activities in the Lightning Creek Basin, Idaho and Montana. Eastern Washington University, Masters Thesis.
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